

Exhibit 16

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

APPLICANT(S): Marcus da Silva
APPLICATION NO.: 10/700,329
FILING DATE: November 3, 2003
TITLE: DIRECTED WIRELESS COMMUNICATION
EXAMINER: Lee, Justin Ye
GROUP ART UNIT: 2617
ATTY. DKT. NO.: 29988/40000

FILED VIA EFS

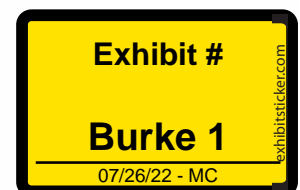
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RENEWED PETITION UNDER 37 CFR 1.137(B)

SIR:

In response to the decision on the petition under 37 CFR 1.137(b), mailed on November 3, 2009, regarding revival of the above-referenced patent application, Applicant respectfully requests reconsideration of this decision.

Applicant concurrently submits an executed Power of Attorney and Statement under 37 CFR 3.73(b) on behalf of the assignee of record, Aequitas Equipment Finance, LLC (Aequitas). By submitting this documentation, the undersigned is authorized to act on behalf of Aequitas.



ARUBA_0032751

Additionally, Applicant respectfully requests the Commissioner to rely on the previously filed amendment in response to the last Office Action that was filed on August 28, 2009, a copy of which is resubmitted herewith.

Applicant also states that the entire delay in filing the required reply from the due date for the reply was unintentional.

Applicant authorizes any required fees requested to be charged to Deposit Account 50-1577. If the Examiner has any questions regarding this communication, he is invited to contact the undersigned at (916) 930-2585.

Respectfully submitted,

By:

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AMENDMENT

SIR:

In response to the Office Action of March 17, 2008, please consider the following amendments and remarks.

Listing of Claims begin on page 2 of this paper.

Remarks/Arguments begin on page 20 of this paper.

Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Claims:

1. (Previously Amended) A Wi-Fi switch comprising:
a multi-beam directed signal system configured for 802.11 specification data packet wireless computing communication with a 802.11 client computing device; and
an antenna assembly configured to receive and emanate wireless communication within a directed beam with the computing device,
wherein the multi-beam directed signal system is configured to determine and adjust, by complementary beam-forming to increase side lobe levels, a transmission peak for a particular directed beam in a non-omni-directional manner based on operational information associated with signal routing and further configured to direct a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.
2. (Previously Presented) A Wi-Fi switch as recited in claim 1, wherein the multi-beam directed signal system is further configured to generate a second directed wireless computing communication to a second 802.11 client computing device and wherein the antenna assembly is further configured to receive the second wireless communication and emanate a second directed computing communication beam for additional data communication with the second computing device.
3. (Previously Presented) A Wi-Fi switch as recited in claim 1, wherein:
the multi-beam directed signal system is further configured to generate a second directed wireless computing communication to a second 802.11 client computing device;

the antenna assembly is further configured to receive the second wireless computing communication and emanate a second directed communication beam for additional data communication with the second computing device; and

the antenna assembly is further configured to emanate the directed communication beam such that only the computing device will receive the data communication, and further emanate the second directed communication beam such that only the second computing device will receive additional data communication.

4. (Previously Presented) A Wi-Fi switch as recited in claim 1, wherein:

the multi-beam directed signal system is multi-channel and further configured for directed wireless computing communication with a second 802.11 client computing device;

the antenna assembly is further configured to emanate the directed communication beam for data communication with the computing device via a first channel; and

the antenna assembly is further configured to emanate a second directed communication beam for additional data communication with the second computing device via a second channel.

5. (Previously Presented) A Wi-Fi switch as recited in claim 1 wherein:

the multi-beam directed signal system is multi-channel and further configured for directed wireless computing communication with a second 802.11 client computing device;

the antenna assembly includes a phased array of antenna elements each configured to emanate a directed communication beam;

the antenna assembly is further configured to emanate the directed communication beam from a first antenna element for the data communication with the computing device via a first channel; and

the antenna assembly is further configured to emanate a second directed communication beam from a second antenna element for additional data communication with the second computing device via a second channel.

6. (Previously Presented) A Wi-Fi switch as recited in claim 1, wherein:

the multi-beam directed signal system is multi-channel and further configured for simultaneous directed wireless computing communication with a second 802.11 client computing device;

the antenna assembly is further configured to emanate the directed communication beam for data communication transmission to the computing device via a first channel; and

the antenna assembly is further configured to emanate a second directed communication beam for data communication reception from the second computing device via a second channel.

7. (Previously Presented) A Wi-Fi switch as recited in claim 1, wherein the multi-beam directed signal system is further configured for simultaneous directed wireless transmission to the computing device and directed wireless reception from a second 802.11 client computing device.

8. (Previously Presented) A Wi-Fi switch as recited in claim 1, wherein the antenna assembly is further configured to emanate the directed wireless communication beam as an electromagnetic signal that includes transmission peaks and transmissions nulls within a coverage area of the communication beam.

9. (Previously Presented) A Wi-Fi switch as recited in claim 1, wherein:
the antenna assembly is further configured to emanate the directed wireless communication beam as an electromagnetic signal that includes a signal transmission peak within a first coverage area and a signal transmission null within a second coverage area; and
the antenna assembly is further configured to emanate a second directed wireless communication beam as a second electromagnetic signal that includes a second signal transmission peak within the second coverage area and a second signal transmission null within the first coverage area.

10. (Previously Presented) A Wi-Fi switch as recited in claim 1, wherein the antenna assembly is further configured to emanate a second directed wireless communication beam for

the data communication with the computing device when the directed wireless communication beam is determined ineffective for data communication.

11. (Previously Presented) A Wi-Fi switch as recited in claim 1, wherein:

the multi-beam directed signal system is further configured to determine when the directed wireless communication beam is ineffective for data communication with the computing device, and is further configured to generate the directed wireless communication for the data communication via a second directed wireless communication beam; and

the antenna assembly is further configured to emanate the second directed wireless communication beam for the data communication with the computing device.

12. (Previously Presented) A Wi-Fi switch as recited in claim 1, wherein the antenna assembly is further configured to emanate multiple directed communication beams, and wherein the multi-beam directed signal system includes signal

coordination logic that monitors the multiple directed communication beams each as an individual access point.

13. (Previously Presented) A Wi-Fi switch as recited in claim 1, wherein the multi-beam directed signal system includes signal coordination logic that controls a directed wireless transmission to the computing device and directed wireless reception from a second computing device such that the directed wireless transmission does not interfere with the directed wireless reception.

14-15. (Cancelled).

16. (Previously Amended) A method, comprising:

generating from a Wi-Fi switch a directed wireless communication for 802.11 specification data packet communication with a 802.11 client computing device;

receiving the directed wireless communication at an antenna assembly; emanating a directed communication beam, associated with a transmission peak, which is adjusted relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase

side lobe levels, in a non-omni-directional manner, for the data communication with the computing device; and

directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

17. (Previously Presented) A method as recited in claim 16, further comprising:
generating a second directed wireless communication for additional data communication with a second computing device;

receiving the second directed wireless communication at the antenna assembly; and
emanating a second directed communication beam, adjusted for a second transmission peak) for the additional data communication with the second computing device.

18. (Previously Presented) A method as recited in claim 16, further comprising:
generating a second directed wireless communication for additional data communication with a second computing device;

receiving the second directed wireless communication at the antenna assembly;
emanating a second directed communication beam, adjusted for a second transmission peak, for the additional data communication with the second computing device; and

wherein the directed communication beam is emanated such that only the computing device will receive the data communication, and the second directed communication beam is emanated such that only the second computing device will receive additional data communication.

19. (Previously Presented) A method as recited in claim 16, further comprising:
generating a second directed wireless communication for additional data communication with a second computing device;

receiving the second directed wireless communication at the antenna assembly;
emanating a second directed communication beam, adjusted for a second transmission peak, for the additional data communication with the second computing device; and

wherein the directed communication beam is emanated from a first antenna element of the antenna assembly, and the second directed communication beam is emanated from a second antenna element of the antenna assembly.

20. (Previously Presented) A method as recited in claim 16, further comprising emanating a second directed communication beam, adjusted for a second transmission peak, for data communication reception from a second computing device, and wherein emanating the directed communication beam includes emanating the directed communication beam for data communication transmission to the computing device.

21. (Previously Presented) A method as recited in claim 16, further comprising: transmitting the data communication to the computing device via the directed communication beam adjusted for a transmission peak;

receiving a second data communication from a second computing device via a second directed communication beam; and

wherein transmitting the data communication and receiving the second directed data communication is simultaneous.

22. (Previously Presented) A method as recited in claim 16, wherein emanating the directed communication beam includes emanating an electromagnetic signal that includes transmission peaks along a signal path during data communication with the computing device and transmissions nulls in another direction within a coverage area of the directed communication beam.

23. (Previously Presented) A method as recited in claim 16, further comprising: determining that the directed communication beam is ineffective for the data communication with the computing device; and

emanating a second directed communication beam for the data communication with the computing device.

24. (Previously Presented) A method as recited in claim 16, further comprising:

transmitting the data communication to the computing device via the directed communication beam;

receiving a second data communication from a second computing device via a second directed communication beam; and

controlling transmitting the data communication such that the data communication does not interfere with receiving the second data communication.

25. (Withdrawn) A multi-beam directed signal system, comprising:

signal coordination logic configured to coordinate directed wireless communication with client devices;

a transmit beam-forming network configured to route data communication transmissions to one or more of the client devices via directed communication beams that are emanated from an antenna assembly; and

a receive beam-forming network configured to receive data communication receptions from one or more of the client devices via the directed communication beams.

26. (Withdrawn) A multi-beam directed signal system as recited in claim 25, further comprising:

receiver/transmitters each configured to transmit a data communication transmission to one or more of the client devices, and each further configured to receive a data communication reception from one or more of the client devices;

wherein the transmit beam-forming network includes transmit ports that each couple an individual antenna element of the antenna assembly to a receiver/transmitter; and

wherein the receive beam-forming network includes receive ports that each couple an individual antenna element of the antenna assembly to a receiver/transmitter.

27. (Withdrawn) A multi-beam directed signal system as recited in claim 25, further comprising:

multiple channels each corresponding to a receiver/transmitter configured to transmit a data communication transmission to a client device and receive a data communication reception from the client device; and

a scanning receiver configured to receive a data communication reception from a client device and determine which of the multiple channels provides acceptable data communication transmission and reception with the client device.

28. (Withdrawn) A multi-beam directed signal system as recited in claim 25, further comprising a scanning receiver configured to scan the directed communication beams and monitor for the data communication receptions from one or more of the client devices.

29. (Withdrawn) A multi-beam directed signal system as recited in claim 25, further comprising:

a memory component configured to maintain information corresponding to one or more of the client devices, the information including at least one of a transmit power level, a data transmit rate, an antenna direction, quality of service data, and timing data; and

wherein the signal coordination logic is further configured to coordinate the directed wireless communication with one or more of the client devices based on the information maintained with the memory component.

30. (Withdrawn) A multi-beam directed signal system as recited in claim 25, further comprising medium access controllers each corresponding to a directed communication beam and configured to communicate data packets for the directed wireless communication between the multi-beam directed signal system and a communication network.

31. (Withdrawn) A multi-beam directed signal system as recited in claim 25, wherein the transmit beam-forming network is further configured to transmit energy on a side lobe of a directed communication beam corresponding to a first client device such that a second client device will detect the side lobe energy and recognize that a data communication transmission is being emanated to the first client device via the directed communication beam.

32. (Withdrawn) A multi-beam directed signal system as recited in claim 25, wherein the signal coordination logic is further configured to coordinate that only a first client device will receive a first directed wireless communication via a first communication beam, and that only a second client device will receive a second directed wireless communication via a second communication beam.

33. (Withdrawn) A multi-beam directed signal system as recited in claim 25, wherein the signal coordination logic is further configured to coordinate a simultaneous data communication transmission to a first client device via a first directed communication beam and a data communication reception from a second client device via a second directed communication beam.

34. (Withdrawn) A multi-beam directed signal system as recited in claim 25, wherein:

the signal coordination logic is further configured to determine when a directed communication beam is ineffective for a data communication transmission to a client device; and

the transmit beam-forming network is further configured to route the data communication transmission to the client device via a second directed communication beam.

35. (Withdrawn) A multi-beam directed signal system as recited in claim 25 wherein the signal coordination logic is further configured to monitor the directed communication beams each as an individual access point.

36. (Withdrawn) A multi-beam directed signal system as recited in claim 25, wherein the signal coordination logic is further configured to coordinate a data communication transmission to a first client device and a data communication reception from a second client device such that the data communication transmission does not interfere with the data communication reception.

37. (Withdrawn) A Wi-Fi switch comprising the multi-beam directed signal system as recited in claim 25.

38. (Withdrawn) A Wi-Fi switch for 802.11 specification data packet communication comprising the multi-beam directed signal system as recited in claim 25.

39. (Withdrawn) A method comprising:
coordinating directed wireless communication with client devices via directed communication beams emanated from an antenna assembly;
routing data communication transmissions through a transmit beam-forming network to antenna elements of the antenna assembly such that a data communication transmission is communicated to a client device via a directed communication beam; and
receiving data communication receptions through a receive beam-forming network from the antenna elements of the antenna assembly such that a data communication reception is received from a client device via a directed communication beam.

40. (Withdrawn) A method as recited in claim 39, further comprising: receiving a data communication reception from a client device with a scanning receiver; and
determining which of multiple channels provides acceptable data communication transmission and reception with the client device.

41. (Withdrawn) A method as recited in claim 39 further comprising monitoring the directed communication beams for the data communication receptions from one or more of the client devices.

42. (Withdrawn) A method as recited in claim 39 further comprising:
maintaining information corresponding to one or more of the client devices, the information including at least one of a transmit power level, a data transmit rate, an antenna direction quality of service data, and timing data; and
wherein coordinating the directed wireless communication includes coordinating a directed wireless communication with a client device based on the information that is maintained.

43. (Withdrawn) A method as recited in claim 39, further comprising generating a directed communication beam as an electromagnetic signal that includes transmission peaks and transmission nulls within a coverage area of the directed communication beam.

44. (Withdrawn) A method as recited in claim 39 further comprising transmitting energy on a side lobe of a directed communication beam corresponding to a first client device such that a second client device will detect the side lobe energy and recognize that a data communication transmission is being emanated to the first client device via the directed communication beam.

45. (Withdrawn) A method as recited in claim 39, further comprising:
determining when a directed communication beam is ineffective for a data communication transmission to a client device; and

routing the data communication transmission to the client device via a second directed communication beam.

46. (Withdrawn) A method as recited in claim 39, wherein coordinating directed wireless communication includes coordinating that only a first client device will receive a first directed wireless communication via a first communication beam, and that only a second client device will receive a second directed wireless communication via a second communication beam.

47. (Withdrawn) A method as recited in claim 39, wherein coordinating directed wireless communication includes coordinating a simultaneous data communication transmission to a first client device via a first directed communication beam and a data communication reception from a second client device via a second directed communication beam.

48. (Withdrawn) A method as recited in claim 39, wherein coordinating directed wireless communication includes coordinating a data communication transmission to a first client device and a data communication reception from a second client device such that the data communication transmission does not interfere with the data communication reception.

49. (Withdrawn) One or more computer-readable media comprising computer executable instructions that, when executed, direct a wireless communication system to:

- coordinate directed wireless communication with client devices via directed communication beams emanated from an antenna assembly;
- route data communication transmissions through a transmit beam-forming network to antenna elements of the antenna assembly such that a data communication transmission is communicated to a client device via a directed communication beam; and
- receive data communication receptions through a receive beam-forming network from the antenna elements of the antenna assembly such that a data communication reception is received from a client device via a directed communication beam.

50. (Withdrawn) One or more computer-readable media as recited in claim 49, further comprising computer executable instructions that, when executed, direct the wireless communication system to;

- receive a data communication reception from a client device with a scanning receiver;
- and
- determine which of multiple channels provides acceptable data communication transmission and reception with the client device.

51. (Withdrawn) One or more computer-readable media as recited in claim 49, further comprising computer executable instructions that, when executed, direct the wireless communication system to monitor the directed communication beams for the data communication receptions from one or more of the client devices.

52. (Withdrawn) One or more computer-readable media as recited in claim 49, further comprising computer executable instructions that, when executed, direct the wireless communication system to:

maintain information corresponding to one or more of the client devices, the information including at least one of a transmit power level, a data transmit rate, an antenna direction quality of service data, and timing data; and

coordinate a directed wireless communication with a client device based on the information that is maintained.

53. (Withdrawn) One or more computer-readable media as recited in claim 49, further comprising computer executable instructions that, when executed, direct the wireless communication system to generate a directed communication beam as an electromagnetic signal that includes transmission peaks and transmission nulls within a coverage area of the directed communication beam.

54. (Withdrawn) One or more computer-readable media as recited in claim 49, further comprising computer executable instructions that, when executed, direct the wireless communication system to:

generate a directed communication beam as an electromagnetic signal that includes a signal transmission peak within a first coverage area and a signal transmission null within a second coverage area; and

generate a second directed communication beam as a second electromagnetic signal that includes a second signal transmission peak within the second coverage area and a second signal transmission null within the first coverage area.

55. (Withdrawn) One or more computer-readable media as recited in claim 49, further comprising computer executable instructions that when executed, direct the wireless communication system to transmit energy on a side lobe of a directed communication beam corresponding to a first client device such that a second client device will detect the side lobe energy and recognize that a data communication transmission is being emanated to the first client device via the directed communication beam.

56. (Withdrawn) One or more computer-readable media as recited in claim 49, further comprising computer executable instructions that, when executed, direct the wireless communication system to:

determine when a directed communication beam is ineffective for a data communication transmission to a client device; and

route the data communication transmission to the client device via a second directed communication beam.

57. (Withdrawn) One Of more computer-readable media as recited in claim 49, further comprising computer executable instructions that, when executed, direct the wireless communication system to coordinate that only a first client device receives a first directed wireless communication via a first communication beam, and that only a second client device receives a second directed wireless communication via a second communication beam.

58. (Withdrawn) One or more computer-readable media as recited in claim 49, further comprising computer executable instructions that, when executed, direct the wireless communication system to coordinate a simultaneous data communication transmission to a first client device via a first directed communication beam and a data communication reception from a second client device via a second directed communication beam.

59. (Withdrawn) One or more computer-readable media as recited in claim 49, further comprising computer executable instructions that, when executed, direct the wireless communication system to coordinate a data communication transmission to a first client device and a data communication reception from a second client device such that the data communication transmission does not interfere with the data communication reception.

60. (Withdrawn) A method, comprising:

associating a client device with a directed communication beam;

receiving signal strength indications for data packets received from the client device;

calculating a signal strength average for the client device from the received signal strength indications; and

maintaining the client device association with the directed communication beam in an event that the signal strength average indicates that the directed communication beam provides an effective communication link.

61. (Withdrawn) A method as recited in claim 60, further comprising:
sampling adjacent signal strength indications of an adjacent directed communication beam;
calculating a second signal strength average for the adjacent directed communication beam;
comparing the signal strength average and the second signal strength average;
maintaining the client device association with the directed communication beam in an event that the signal strength average indicates that the directed communication beam provides a better communication link than the adjacent directed communication beam.

62. (Withdrawn) A method as recited in claim 60, further comprising:
sampling adjacent signal strength indications of an adjacent directed communication beam;
calculating a second signal strength average for the adjacent directed communication beam;
comparing the signal strength average and the second signal strength average;
disassociating the client device from the directed communication beam in an event that the second signal strength average indicates that the adjacent directed communication beam provides a better communication link than the directed communication beam; and
reassociating the client device with the adjacent directed communication beam.

63. (Withdrawn) A method as recited in claim 60, further comprising:

sampling adjacent signal strength indications of an adjacent directed communication beam;

calculating a second signal strength average for the adjacent directed communication beam;

comparing the signal strength average and the second signal strength average;

disassociating the client device from the directed communication beam in an event that the signal strength average indicates that the directed communication beam is an ineffective communication link; and

reassociating the client device with the adjacent directed communication beam in an event that the second signal strength average indicates that the adjacent directed communication beam provides an effective communication link.

REMARKS/ARGUMENTS**Status of the Claims**

Claims 1-13 and 16-24 stand rejected.

Claims 14 and 15 are cancelled. Claims 25-63 are presently withdrawn pursuant to a restriction requirement.

As a result, Claims 1-13 and 16-63 are now pending in this application.

Claim Rejections - 35 USC § 103

Claims 1-13 and 16-24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Periyalwar (US 6,611,695), as taken in view of Adachi et al. (US 2003/0064752 A1), and further in view of Corbell et al. (US 3,747,109).

Regarding claim 1, it is asserted that Periyalwar discloses a wireless communication system, comprising: a multi-beam directed signal system configured for directed wireless computing communication with a computing device; and an antenna assembly configured to receive the directed wireless communication and emanate wireless communication within a directed beam with the computing device.

Applicant again notes that the Periyalwar reference is not conceded to be prior art, and reserves the right to swear behind the asserted reference at a later date, if necessary.

Applicants' application and independent claims, as amended, relate to a data communication system for computing devices such as a local area network (LAN) or wide area network (WAN) computing network. As recited in the Background section, one shortcoming of wireless data communication is a relatively low bandwidth compared to a wired LAN or WAN system.

The Periyalwar reference describes a method and apparatus for assigning frequency channels to a particular beam within an omni directional multi-beam cellular voice phone system having channels which communicate equally in all directions. In Periyalwar, a (fixed) geographic region is divided up into a plurality of (fixed) hexagonally-shaped "cells," each cell having a central base station for receiving and transmitting to and from wireless telecommunication devices located within the cell. Each cell is sectorized, and/or subdivided, and thereafter the fixed geographical cell

area is serviced by a number of beams using directional antennae.

Thus, Periyalwar concerns itself with a series of inter-related fixed, omni-directional communication beams, and the means for managing and transferring communications from a cellular communication device that is moving among and between such cells. As shown in Figure 1 of the Periyalwar reference, the radial extent of each beam is set to reach to the cell boundary.

The Periyalwar reference relates to means for assessing channel quality within each such beam, and select an acceptable channel from among those that are available. The Periyalwar reference does not describe any mechanism for adjusting beam characteristics, such as by associating a transmission peak and/or null with a particular communication beam. The Periyalwar reference does not teach or disclose any manipulation of the beam characteristics whatsoever, or that any beam result in anything other than a geographically-fixed cell boundary.

Applicants' disclose and claim a system for making adjustments to a multi-beam directed signal system that is configured to determine a transmission peak for a particular directed wireless computing communication beam in a non-omni directional manner based on operational information associated with signal routing. The complementary beam-forming both increases side lobe levels, and works to direct a transmission null in a particular. In this manner, more power can be associated with a particular signal path and/or communication beam (i.e., associated with a transmission peak), to increase communication range, to increase data integrity or data security.

Applicants' independent Claim 1 recites "the multi-beam directed signal system is configured to determine and adjust, by beam forming, a transmission peak for a particular directed wireless computing communication beam in a non-omni directional manner based on operational information associated with signal routing." This is very different than simply choosing a channel in an omni-directional cellular voice phone system as described the Periyalwar reference, for the purpose of managing signal strength during movement of mobile devices within a multi-beam cellular communications system.

The Adachi reference is cited as disclosing a multi-beam directed signal system wherein the multi-beam directed signal system is configured to determine and adjust, by complementary beam-forming, a transmission peak for a particular directed beam in a non-omni-directional

manner based on operational information associated with signal routing, and further configured to direct a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction (citing Fig. 12 and 15 and paragraphs 148, 151, 162, 164, 167, and 171- 174).

The Adachi application is further cited as teaching that the beam is adjusted to the direction of a device it is communicating to and narrows the beam on the device to reduce the null effect and maintaining power consumption for longer distance devices (complementary beam-forming). A transmission null is allegedly directed to maximize the power associated with the transmission peak and minimize interference in the particular direction, by directing the beam in a particular direction and narrowing it.

Applicant does not admit that the Adachi application is prior art and reserves the right to swear behind the same at a later date. The present application (Serial No. 10/700,329) was filed on November 3, 2003, and claimed the benefit of a related U.S. Provisional Application Serial No. 60/423,660, entitled "A Wireless Data Packet Communications System," filed on November 4, 2002 (see paragraph 1). Thus the effective filing date of the present application is November 4, 2002.

The Adachi application was published on April 3, 2003, on an application (Serial No. 10/242,632) filed September 13, 2002. Applicant reserves the right to swear behind the Adachi Application at a later date.

Nonetheless, in the interest of advancing the prosecution of the present application, Applicant respectfully submits that the elements and limitations of the claims of the present application can be distinguished from the teachings of the Periyalwar and Adachi references for at least the following reasons. Applicants' independent claim 1 presently recites:

a multi-beam directed signal system configured for 802.11 specification data packet wireless computing communication with a 802.11 client computing device;
and

an antenna assembly configured to receive and emanate wireless communication within a directed beam with the computing device,

wherein the multi-beam directed signal system is configured to determine and adjust, by complementary beam-forming to increase side lobe levels, a transmission peak for a particular directed beam in a non-omni-directional manner based on operational information associated with signal routing, and further configured to direct a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Applicants' independent claim 16 presently recites:

generating from a Wi-Fi switch a directed wireless communication for 802.11 specification data packet communication with a 802.11 client computing device; receiving the directed wireless communication at an antenna assembly;

emanating a directed communication beam associated with a transmission peak, which is adjusted relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner for the data communication with the computing device; and

directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

In response to an earlier Office Action, Applicant argued that the Adachi application does not describe, teach, or suggest, and is not equivalent to, complementary beam forming. That is, adjusting and narrowing does not equate to complementary beam forming as defined by the present disclosure, which entails more than mere directed wireless communications.

The cited portions of the Adachi application (Figs. 12 and 15, and paragraphs 148, 151, 162, 164, 167 and 171-174) appear to merely describe directing a communication beam, for example, by using weighting factors associated with a directional antenna, to reduce the influences of interference on an unintended base station or terminal using an identical channel. The reference, however, does not teach complementary beam forming as described above, as the purpose and design of the beam forming in the Adachi application is very different. The Periyalwar reference does not appear to cure the stated deficiencies in the Adachi application, as acknowledged by the Office Action.

The Adachi Application is directed towards improving communications between base stations without them being influenced by communications between the base station and

terminals (see, for example, paragraphs [0011] to [0015] of the Adachi application).

Paragraphs [0114] - [0117] of the present application describe complementary beam forming as "a technique to reduce the effect of communication beam nulls and increase side lobe levels without a severe power penalty to the main beam." Complementary beam-forming, as described in the present application, is utilized as a technique to ensure a minimum transmit power in all directions, by reducing the "hidden beam" effect of nulls in certain directions that may accompany a directional communication beam, such as in Adachi. That is, fanning directional transmit communication beams, as in Adachi, has the side effect of hiding the transmitted energy from some client devices, negatively impacting their carrier sense mechanisms in a network. Since the present invention is intended to be an open network, the hiding of the beam from certain areas or client devices is directly contrary to the purpose of the invention, which is both inclusive as to the range of generation of the beam, and restrictive as to deliberately directing transmission nulls where there is interference and the like.

For example of the difference, a client device can measure the energy transmitted from access points and from other client devices. If a client device cannot detect the presence of other transmissions, due to use of directional communication beams, it may interpret the medium as being idle and attempt to access the medium, when, in fact, the medium is busy. These competing access attempts have a burdening effect on the performance of the network.

Complementary beam-forming, as claimed and defined by the present application, ensures that multiple transmit beams in arbitrary directions are complemented by another beam in all other directions. The complementary beam does not interfere with the intended beams and increases the probability that other users in the network can detect whether the medium is idle or available for their use, thus contributing to the efficient usage of the network.

The Periyalwar reference, alone or in combination with the Adachi application, does not appear to describe, teach or suggest using complementary beam-forming. Complementary beam-forming is discussed in the specification, as originally filed, at paragraphs 0114 - 0117, among others. Complementary beam-forming ensures, in part, a minimum transmit power in all directions while preserving the shape of the main communication beam, e.g., transmission peak, such that clients other than an intended client

device are able to ascertain whether the communication medium is busy or idle (and available).

Finally, the Periyalwar reference, alone or in combination with the Adachi application, does not appear to describe, teach or suggest a multi-beam directed signal system configured to direct a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction. As set forth generally in paragraph 0024, and in more detail in paragraphs 0105 - 0108, of the specification as originally filed, a transmission null occurs in a transmission pattern when a relatively insignificant amount of energy is transmitted in a particular direction.

While it is not the sole deficiency of the Periyalwar and Adachi applications, the Patent Office concedes that those references taken alone or together, do not teach increasing side lobe levels when beam-forming, and for this purpose, the Corbell et al. patent is cited as teaching increasing side lobe levels when beam-forming (col. 7, lines 16-19, the side lobes are increased to cover more area).

It is thus asserted that it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Corbell et al. into the teachings of Periyalwar and Adachi et al. for the purposes of improving the radiation detection within a generally rectangular area (col. 7, lines 16-19).

Corbell et al. teaches an alarm system that adapts Doppler frequency principles to enhance an alarm system using microwave energy (see Column 3, line 52, to Column 4, line 2). The intrusion detection apparatus includes a transmitting aperture adapted to produce a field beam of microwave energy that can be manipulated to fill an area to be monitored for intrusion by a moving body within the field, triggering an alarm at the presence of an intruder.

Corbell et al. does not relate to the field of communications, and, further, the electromagnetic systems employed are different, and employed for a different purpose. Even the section cited in the Office Action seems inapposite, as it states "Applicant has found that the

extension of the side lobes or the use of the essentially laterally projecting flanges improves the radiation detection within a generally rectangular area” (column 7, lines 16-19). The purpose is made clear in the next paragraph of the Corbell application, which notes the desired result as being that the total area of a room or warehouse can be “totally filled with the radiated energy field primarily as a result of the reflective nature of the walls such that the movement in any area will be detected”, and will product “maximum sensitivity to the most significant portion of the area being protected and the intrusion of a body most likely to be encountered.” (Column 7, lines 20 – 38).

Corbell et al., even taken with the Periyalwar and Adachi applications, does not disclose Applicants system for affirmatively directing a transmission null along a particular signal path (for example by assigning a zero weighting factor to a particular vector in a routing table) towards an undesired, possibly interfering, device or object, nor suggest how this could achieve a number of benefits described in the specification.

Applicants respectfully submit that the claimed "directing a transmission null" is not described, taught or suggested by the mere absence of a communication beam in a particular direction, nor implied by a discussion of directed communication beams, nor does the manipulation of microwave radiation patters taught by Corbell et al. cover the deficiency.

Therefore, it would not have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of the Periyalwar and Adachi applications and adapt with the teachings of Corbell et al. for the purposes of without influencing other communications therefore reducing/preventing interference in the network (paragraph 11).

Regarding claim 2, while Periyalwar discloses a multi-beam directed signal system to multiple discrete cells of a cellular system, within which it is further configured to generate a second directed wireless computing communication to a second computing device, and wherein the antenna assembly is further configured to receive the second wireless communication and emanate a second directed computing communication beam for additional data communication

with the second computing device (cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 3, while Periyalwar discloses a multi-beam directed signal system for a cellular network that is further configured to generate a second directed wireless computing communication to a second computing device the antenna assembly is further configured to receive the second wireless computing communication and emanate a second directed communication beam for additional data communication with the second computing device; and the antenna assembly is further configured to emanate the directed communication beam such that only the computing device will receive the data communication, and further emanate the second directed communication beam such that only the second computing device will receive the additional data communication (cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 4, while Periyalwar discloses a multi-beam directed signal system for a cellular communications network system that is multi-channel and further configured for directed wireless computing communication with a second computing device; the antenna assembly is further configured to emanate the directed communication beam for data communication with the computing device via a first channel; and the antenna assembly is further configured to emanate a second directed communication beam for additional data communication with the second computing device via a second channel (cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 5, while Periyalwar may disclose a multi-beam directed signal system that is multi-channel and further configured for directed wireless computing communication with a second computing device; the antenna assembly includes a phased array of antenna elements each configured to emanate a communication beam; the antenna assembly is further configured to emanate the directed communication beam from a first antenna element for the data communication with the computing device via a first channel; and the antenna assembly is further configured to emanate a second directed communication beam from a second antenna element for additional data communication with the second computing device via a second Channel (cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by

complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 6, while Periyalwar may disclose a multi-beam directed signal system that is multi-channel and further configured for simultaneous directed wireless computing communication with a second computing device, and where the antenna assembly is further configured to emanate the directed communication beam for data communication transmission to the computing device via a first channel; and the antenna assembly is further configured to emanate a second directed communication beam for data communication reception from the second computing device via a second channel (cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 7, while Periyalwar may disclose a multi-beam directed signal system that is further configured for simultaneous directed wireless transmission to the computing device and directed wireless reception from a second computing device (cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase

side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 8, while Periyalwar may disclose a multi-beam directed signal system that is further configured to emanate the directed communication beam as an electromagnetic signal that includes transmission peaks and transmissions nulls within a coverage area of the communication beam (cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 9, while Periyalwar may disclose a multi-beam directed signal system that is further configured to emanate the directed communication beam as an electromagnetic signal that includes a signal transmission peak within a first coverage area and a signal transmission null within a second coverage area; and the antenna assembly is further configured to emanate a second directed communication beam as a second electromagnetic signal that includes a second signal transmission peak within the second coverage area and a second signal transmission null within the first coverage area (cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side

lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 10, while Periyalwar may disclose a multi-beam directed signal system that include an antenna assembly is further configured to emanate a second directed communication beam for the data communication with the computing device when the directed communication beam is determined ineffective for data communication (cited for the teachings at column 2 lines 5067 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 11, while Periyalwar may disclose a multi-beam directed signal system that is further configured to determine when the directed communication beam is ineffective for data communication with the computing device, and is further configured to generate the directed wireless communication for the data communication via a second directed communication beam; and the antenna assembly is further configured to emanate the second directed communication beam for the data communication with the computing device (cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data

communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 12, while Periyalwar may disclose a multi-beam directed signal system that is further configured to emanate multiple directed communication beams, and wherein the multi-beam directed signal system includes signal coordination logic that monitors the multiple directed communication beams each as an individual access point (cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction. Regarding claim 13-15, while Periyalwar may disclose a multi-beam directed signal system that includes signal coordination logic that controls a directed wireless transmission to the computing device and directed wireless reception from a second computing device such that the directed wireless transmission does not interfere with the directed wireless reception (cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 16, the arguments above regarding Claim 1 and the inadequacies of Periyalwar and Adachi applications, alone or taken with Corbell et al., are reiterated here.

With respect to independent Claim 16, as for Claim 1, the claim includes a limitation of emanating a directed communication beam, associated with a transmission peak which is adjusted relative to other beams of a multi-beam directed signal system by beam forming in a non-omni directional manner, for the data communication with the computing device. The Periyalwar reference describes evaluating the quality of particular channels within a particular beam and a channel selection process based on the evaluation, but does not appear to describe adjusting or changing the communication beam, for example, by emanating a directed communication beam, associated with a transmission peak which is adjusted relative to other beams of a multi-beam directed signal system, for the data communication with the computing device.

And, as for Claim 1, neither the Adachi application nor Corbell et al., supply the missing limitations.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the 102 rejection of independent Claim 16, as amended, as well as dependent Claims 17-24 which depend from independent Claim 16.

Regarding claim 17, while Periyalwar may disclose generating a second directed wireless communication for additional data communication with a second computing device; receiving the second directed wireless communication at the antenna assembly; and emanating a second directed communication beam, adjusted for a second transmission peak, for the additional data communication with the second computing device (Periyalwar, cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side-lobe levels, in a non-omni-directional manner, for the data communication with the computing

device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 18, while Periyalar may disclose generating a second directed wireless communication for additional data communication with a second computing device; receiving the second directed wireless communication at the antenna assembly; emanating a second directed communication beam, adjusted for a second transmission peak, for the additional data communication with the second computing device; and wherein the directed communication beam is emanated such that only the computing device will receive the data communication, and the second directed communication beam is emanated such that only the second computing device will receive the additional data communication (Periyalar, cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 19, while Periyalar may disclose generating a second directed wireless communication for additional data communication with a second computing device; receiving the second directed wireless communication at the antenna assembly; emanating a second directed communication beam, adjusted for a second transmission peak, for the additional data communication with the second computing device; and wherein the directed communication beam is emanated from a first antenna element of the antenna assembly, and the second directed communication beam is emanated from a second antenna element of the antenna assembly (Periyalar, cited for the teachings at column 2 lines 50-67 and column 3, lines 1-54), this is not

accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 20, while Periyalwar may disclose emanating a second directed communication beam, adjusted for a second transmission peak, for data communication reception from a second computing device, and wherein emanating the directed communication beam includes emanating the directed communication beam for data communication transmission to the computing device (Periyalwar, cited for the teachings at column 2 lines -50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 21, while Periyalwar may disclose transmitting the data communication to the computing device via the directed communication beam adjusted for transmission peak; receiving a second data communication from a second computing device via a second directed communication beam; and wherein transmitting the data communication and receiving the second directed data communication is simultaneous (Periyalwar, cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the

claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 22, while Periyalwar may disclose emanating the directed communication beam includes emanating an electromagnetic signal that includes transmission peaks and transmissions nulls within a coverage area of the directed communication beam (cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 23, while Periyalwar may disclose determining that the directed communication beam is ineffective for the data communication with the computing device; and emanating a second directed communication beam for the data communication with the computing device (cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional

manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

Regarding claim 24, while Periyalwar may disclose transmitting the data communication to the computing device via the directed communication beam; receiving a second data communication from a second computing device via a second directed communication beam; and controlling transmitting the data communication such that the data communication does not interfere with receiving the second data communication (cited for the teachings at column 2 lines 50-67 and column 3 lines 1-54), this is not accomplished the same way as for the claimed invention, and more particularly, this is not taught within the context of emanating a directed communication beam, associated with a transmission peak, and adjusting it relative to other beams of a multi-beam directed signal system by complementary beam-forming to increase side lobe levels, in a non-omni-directional manner, for the data communication with the computing device, nor directing a transmission null in a particular direction to maximize power associated with the transmission peak and minimize interference in the particular direction.

CONCLUSION

In light of the above remarks, Applicant believes that the application, as amended, is in condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to allowance.

This response is being filed with a fee and an extension of time to reply to the Office Action for 3 months. It is also being filed with a petition to revive for an unintentionally abandoned application.

Applicant authorizes any required fees requested to be charged to Deposit Account 50-1577. If the Examiner has any questions regarding this communication, he is invited to contact the undersigned at (916) 930-2585.

Respectfully submitted,

By:

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Date: August 28, 2009

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Electronic Acknowledgment Receipt

EFS ID:	6477330
Application Number:	10700329
International Application Number:	
Confirmation Number:	5147
Title of Invention:	Directed wireless communication
First Named Inventor/Applicant Name:	Marcus da Silva
Correspondence Address:	Vivato, Inc. - 139 Townsend Street, Suite 200 - San Francisco CA 94107 US - -
Filer:	Carl J. Schwedler/Ariele Ross
Filer Authorized By:	Carl J. Schwedler
Attorney Docket Number:	
Receipt Date:	18-NOV-2009
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Application Type:	Utility under 35 USC 111(a)

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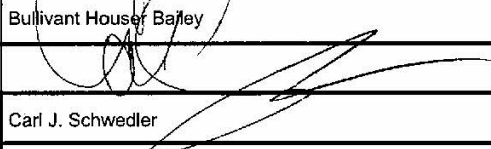
Case 2:23-cv-00202-JRG-RSP Document 170-17 Filed 06/04/25 Page 41 of 45

Document Number	Document Description	File Name	File Size (Bytes)/ Message Digest	Multi-Part / .zip	Pages (if appl.)
1	Transmittal Letter	Transmittal.PDF	57214 cc103952b1baf606126ad8ee6b3798d052111b	no	1
Warnings:					
Information:					
2	Power of Attorney	POA.PDF	59478 38c7b14a2a18dbcb86b79554002ff5b2b8a0f017	no	1
Warnings:					
Information:					
3	Assignee showing of ownership per 37 CFR 3.73(b).	Statement.pdf	90867 80c758519ea1f0da04376e61e7dda248ce135f0b	no	2
Warnings:					
Information:					
4	Petition for review by the Office of Petitions.	Petition.pdf	45834 459c58055c1b1f38af96cf3ee68514c1722a0013	no	2
Warnings:					
Information:					
5	Miscellaneous Incoming Letter	Amendment.pdf	1677980 9d1dd01172cda83630cc0c0a2b1a0e059c2f22a	no	36
Warnings:					
Information:					
Total Files Size (in bytes):			1931373		
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TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	10/700,329
	Filing Date	November 3, 2003
	First Named Inventor	Marcus da Silva
	Art Unit	2617
	Examiner Name	Lee, Justin Ye
	Attorney Docket Number	29988/40000
Total Number of Pages in This Submission		42

ENCLOSURES (Check all that apply)		
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input checked="" type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input checked="" type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Statement Under 37 CFR 3.73(b)
Remarks		
SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT		
Firm Name	Bullivant Houser Bailey	
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Printed name	Carl J. Schwedler	
Date	November 18, 2009	Reg. No. 36,924

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PTO/SB/81 (01-09)

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POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS	Application Number	10700,329
	Filing Date	November 3, 2003
	First Named Inventor	Marcus da Silva
	Title	Directed Wireless Communication
	Art Unit	2817
	Examiner Name	Lee, Justin Ye
	Attorney Docket Number	28988/40000

I hereby revoke all previous powers of attorney given in the above-identified application.

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I am the:

☐ Applicant/Inventor.

OR

☒ Assignee of record of the entire interest. See 37 CFR 3.71.

Statement under 37 CFR 3.73(b) (Form PTO/SB/96) submitted herewith or filed on _____

SIGNATURE of Applicant or Assignee of Record

Signature

Date

November 18, 2009

Name

Thomas A. Staley

Telephone

Title and Company

Member, Aequitas Equipment Finance, LLC

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☒ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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STATEMENT UNDER 37 CFR 3.73(b)Applicant/Patent Owner: Aequitas Equipment Finance, LLCApplication No./Patent No.: 10/700,329Filed/Issue Date: November 3, 2003Titled: DIRECTED WIRELESS COMMUNICATION

Aequitas Equipment Finance, LLC

, a limited liability company

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☐ the assignee of the entire right, title, and interest in;
2. ☐ an assignee of less than the entire right, title, and interest in
(The extent (by percentage) of its ownership interest is _____ %); or
3. ☒ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)
the patent application/patent identified above, by virtue of either:

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy therefore is attached.

OR

B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Marcus da Silva, et al. (all inventors) To: Vivato, Inc.

The document was recorded in the United States Patent and Trademark Office at
Reel 014835, Frame 0270, or for which a copy thereof is attached.

2. From: Vivato, Inc. To: Wayout Wireless, LLC

The document was recorded in the United States Patent and Trademark Office at
Reel 018313, Frame 0608, or for which a copy thereof is attached.

3. From: Wayout Wireless, LLC To: Vivato Networks, LLC

The document was recorded in the United States Patent and Trademark Office at
Reel 019704, Frame 0789, or for which a copy thereof is attached.

☒ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature

November 18, 2009

Date

Thomas A. Sidley

Member, Aequitas Equipment Finance, LLC

Printed or Typed Name

Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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4. From: Vivato Networks, Inc., formerly Vivato Networks, LLC To: Aequitas Capital Management, Inc.

The document was recorded in the United States Patent and Trademark Office at

Reel 020174, Frame 0698
or for which a copy thereof is attached.

5. From: Aequitas Capital Management, Inc. To: Aequitas Equipment Finance, LLC

The document was recorded in the United States Patent and Trademark Office at

Reel 022645, Frame 0243
or for which a copy thereof is attached.

6. From: Vivato Networks, LLC now known as Vivato Networks, Inc. To: Vivato Networks Holdings, LLC

The document was recorded in the United States Patent and Trademark Office at

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or for which a copy thereof is attached.

7. From: Vivato Networks, Inc. To: Aequitas Equipment Finance, LLC

The document was recorded in the United States Patent and Trademark Office at

Reel 022645, Frame 0246
or for which a copy thereof is attached.

8. From: Vivato Networks Holdings, Inc., formerly Vivato Networks Holdings, LLC To: Aequitas Equipment Finance, LLC

The document was recorded in the United States Patent and Trademark Office at

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or for which a copy thereof is attached.

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